

## BOOK REVIEWS

John J. Downes, M.D., Editor

**The Pharmacologic Approach to the Critically Ill Patient.** EDITED BY B. CHERNOW. Baltimore, Williams & Wilkins, 1988. Pages: 975. Price: \$116.50.

This book provides a unique perspective into the management of critically ill patients. There has been extensive revision and updating of this second edition and it most certainly achieves Dr. Chernow's goal of being "a valuable resource providing both clinically useful prescribing information, as well as basic science data and advanced pharmacologic principles." The multidisciplinary approach allows the reader exposure to perspectives from many fields of expertise.

The text consists of 48 chapters divided into four sections. Some overlap of material is seen, as for instance in the chapters on cardiovascular adrenoceptors, resuscitation pharmacology, and catecholamines and other inotropes. This redundancy is less than that usually seen in multiauthored texts and in general is a positive attribute with different perspectives being stressed in each chapter. Tables and illustrations are liberally used throughout the text and are generally quite good, both facilitating comprehension and providing a source for future reference. Extensive and up-to-date bibliographies accompanying most chapters allow for ready access to both historical as well as more recent literature.

In the first section, "Clinical Pharmacology in the ICU," chapters on pharmacokinetics, drug interactions, and pediatric pharmacotherapy provide a sound basis for concepts applicable throughout the text. These "introductory" chapters are appropriately detailed and assume prior exposure to some of the material. Subsequent chapters addressing the pharmacokinetic impact of underlying disease states are well conceived but inconsistent. The chapter on the impact of renal failure has good coverage of specific drugs with well-organized tables, but needs greater attention to the pharmacokinetic and pharmacodynamic impact of the various forms of renal failure, as well as better coverage of hemofiltration and hemodialysis. The latter is given cursory coverage in other chapters as well. Chapters on the pharmacologic impact of congestive heart failure and pulmonary failure lack focus, whereas the chapter on adjustment of medications in liver failure is superb with excellent tables. The first section concludes with a "state-of-the-art" chapter on cardiovascular adrenoceptors, with particular emphasis on alpha adrenoceptors. The text, however, would benefit from a more balanced overview, including coverage of cholinergic and dopaminergic receptors.

The section on resuscitation pharmacology encompasses seven chapters, covering a wide range of topics. These include a basic review of drugs used in Advanced Cardiac Life Support, as well as nice coverage of cerebral protection and transfusion therapy. The colloid *versus* crystalloid controversy is reviewed in a balanced fashion. There are also up-to-date overviews of red cell substitutes and thrombolytic therapy. The latter chapters assume some background knowledge. The chapter on anesthetic pharmacology in critical care is out of place and so cursory as to limit its usefulness.

The third section consists of 20 chapters reviewing various "medication groups." A wide array of topics, including digitalis, oxygen therapy, anticoagulants, and antimicrobials, is covered. Comments will be limited to a few of these chapters. The chapter on diuretics and other medications used in renal failure is organized in a manner inconsistent with the remainder of the text. It lapses into a redundant review of the impact of adrenergic and vasoactive agents on renal function and does not address the crucial issue of pharmacologic strategies for the preservation of renal function. On the other hand, "The

Pharmacologic Approach to Gastrointestinal Disease" presents an excellent review of the prevention and treatment of gastrointestinal disease in critical illness. Chapters on vasodilator therapy, antihypertensives, antiarrhythmics, and bronchodilators are generally quite good. Coverage of pulmonary hypertension and right heart failure is scant. The text is notable for state-of-the-art coverage of catecholamines, amrinone, and glucagon. Unfortunately little mention is made of esmolol. The chapter on "Divalent Ions: Calcium, Magnesium, and Phosphorus" and the one on antineoplastic agents are of particular use to the busy intensivist as they are inconsistently or incompletely covered in other textbooks. Rounding out this section is coverage of seizure therapy, analgesics, psychopharmacology, corticosteroids, insulin and hypoglycemics, thyroid hormones, and topical therapy.

The final section of the text, "Special Considerations in Critical Care Pharmacology," consists of 12 chapters, with particular emphasis on newer frontiers in critical care medicine. This includes coverage of endogenous opioids and other peptides, arachidonic acid metabolites, plasma fibronectin, radiation injury, critical illness and marrow transplantation, computer control of vasoactive agents and calcium, and calcium antagonists in shock and ischemia. Also included are chapters on poisoning (good overview), glucocorticoids and sepsis, electrolyte disorders, and special pediatric problems. Parenteral nutrition is reviewed but enteral nutrition is inadequately covered. Another topic of increasing importance to the intensivist, not reviewed in this text, is the pharmacology of different modes of postoperative and post-traumatic analgesia.

Overall, I have found this a quite useful text that has already been put to use in my intensive care practice. It provides a unique perspective into the management of critically ill patients and succeeds in merging the scientific basis of medicine with clinical experience. As the title suggests, the text stresses the pharmacology and therapy of critical illness. The indexing and extensive bibliographies facilitate use as a reference source. I highly recommend this text to physicians and medical students working in the critical care setting. Similarly, anesthesiologists will find the text a useful and contemporary source of information on the agents used to manage the concomitant illnesses of their patients.

THOMAS M. DODDS, M.D.  
*Assistant Professor of Anesthesiology  
Dartmouth-Hitchcock Medical Center  
Hanover, New Hampshire 03756*

**Anesthesia and Coexisting Disease, Second Edition.** EDITED BY R. K. STOELTING, S. F. DIERDORF, R. F. MCCAMMON. New York, Churchill Livingstone, 1988. Pages: 936. Price: \$75.00.

The role of the anesthesiologist has evolved in recent times from simple purveyor of gases and drugs to perioperative consultant for patients with complicated diseases. Consequently, the understanding of the pathophysiology and management of disease states has become vital.

The second edition of *Anesthesia and Coexisting Disease* is the outstanding product of an effort to describe diseases as they relate to the practice of anesthesia. The text is similar in structure and content to the first edition published by Churchill Livingstone in 1983, but with significant updating and the addition of new topics.

The stated desire of the authors is to provide both an introductory text as well as a reference book. They accomplish this by organizing

chapters into sections, including general background information, history, physical, and laboratory findings, anatomy, pathophysiology, and management, with an emphasis on anesthetic implications. The depth of discussion progresses from basic principles in some of the earlier sections to more detailed outlines of anesthetic management, which include salient information from recent related literature.

The beginner should benefit from the clear presentations of very complicated pathophysiology. In this regard, the chapters on coronary artery disease, valvular heart disease, and diseases of the nervous system are exemplary. The expert will appreciate concise reviews of the basic disease states and will be attracted by the division of information into discrete areas, allowing quick access for reference use.

The text contains 36 chapters, beginning with 13 chapters on cardiovascular disorders, proceeding through all the major systems, and concluding with chapters on substance abuse, pregnancy, pediatrics, and geriatrics. New sections on AIDS, organ transplantation, lithotripsy, toxic shock syndrome, Lyme disease, and Alzheimers help maintain the second edition's status as a current reference source. As in the first edition, excellent illustrations, figures, and tables further clarify the written word. Despite the encyclopedic nature of this effort, the editors have assured easy readability with consistently lucid and flowing prose.

The initial chapter on coronary artery disease has been updated, with a more developed discussion of cholesterol and lipoproteins, factors influencing reinfarction, and the concept of coronary steal. The section on noninvasive cardiac imaging is not as complete as one might desire, failing to discuss gated blood pool scanning, differences in echocardiographic modes, and dipyridamole stress tests. A brief section on percutaneous transluminal angioplasty has been added, unfortunately without reference to streptokinase or tissue plasminogen activator. A useful addition on heart transplantation closes the chapter.

"Valvular Heart Disease" is essentially unchanged from the excellent presentation in the first edition, with the exception of a more detailed and current look at mitral valve prolapse. "Abnormalities of Conduction and Rhythm" includes expanded discussions of pre-excitation and prolonged QT syndromes with significant additions from recent literature. There is no update on treatment of ventricular premature beats, and the recommendations of therapy are somewhat misleading, since no reference is made to the controversial nature of this subject. Likewise, the recommendation to treat paroxysmal atrial tachycardia with carotid sinus massage does not include a caveat on the consequences of this maneuver in those with atherosclerotic plaques. "Artificial cardiac pacemakers" is an up-to-date, succinct, and extremely useful chapter.

Major chapters like "Obstructive Airways Disease," "Recognition and Management of Respiratory Failure," and "Diseases of the Nervous System" cover extensive ground, yet manage to provide sufficient detail concerning diagnosis and therapy, making them valuable adjuncts to perioperative care.

"Metabolism and Nutrition" contains an excellent discussion on obesity. The coverage of diabetes mellitus is deficient in some respects: there is no mention of the possibility of continued need for insulin in ketoacidosis once normal glucose levels are attained, and there are insufficient warnings against iatrogenic hypoglycemia and rapid declines in plasma osmolality.

Disappointingly, there are several areas which have not been revised to any extent in the second edition. "Aneurysms of the Thoracic and Abdominal Aorta" contains significant changes only in the section on myocardial contusions. Topics like congestive heart failure, septic shock, and the metabolic effects of surgical stress have received a fair amount of recent press and yet are minimally revised.

Despite spotty deficiencies, the overall product is a superbly written text. The second edition of *Anesthesia and CoExisting Disease* accomplishes its goal to serve as a reference for problems in anesthesia related to complicated diseases, and to be accessible to both neophyte and professor. In many situations, it can provide sufficient information to serve as a solitary source. Even where the cursory coverage of certain

rare diseases makes supplementary materials essential, it functions as a reference for relevant data in the anesthesia literature.

Undoubtedly, the second edition of *Anesthesia and CoExisting Disease*, like the first, will become a well-worn mainstay in the anesthesia libraries of practicing anesthesiologists and residents. It should also be valuable to any physician participating in the perioperative care of patients with disease.

JANICE M. BITETTI, M.D.  
Associate Professor of Anesthesiology  
George Washington University Medical Center  
Washington, D.C. 20037

**Effective Hemostasis in Cardiac Surgery.** EDITED BY NORIC ELLISON AND DAVID R. JOBES. Philadelphia, W. B. Saunders Company, 1988. Pages: 220. Price: \$47.00.

*Effective Hemostasis in Cardiac Surgery* is a clear and concise account of the perceived problems and proposed solutions pertaining to the coagulation abnormalities associated with cardiopulmonary bypass. This Society of Cardiovascular Anesthesiologists monograph contains the contributions of 20 authors in 13 chapters.

The chosen topics deal with the methods and problems of heparin and protamine usage, divergent opinions as to the primary coagulopathy induced by cardiopulmonary bypass, and the various rationales for using either blood products or pharmacological means to ameliorate persistent bleeding. Other subjects include strategies for monitoring anticoagulation and assessing coagulopathies, the significance for anesthetic care of fibrinolytic therapy preoperatively, and an assessment of the major problems of perioperative hemostasis needing solution in the near term. Altogether, this book does an admirable job of succinctly reviewing the problems and therapies of coagulopathies in the perioperative period of cardiopulmonary bypass.

The first two chapters deal with heparin and protamine usage, respectively. Both go beyond merely describing dosage regimens. Ellison *et al.* deal with the questions of how much heparin is needed for safe cardiopulmonary bypass, the pitfalls and limitations of various common tests of coagulation, the interplay of heparin with the components of the coagulation cascade/network, and caveats regarding resistance to heparin efficacy, as well as heparin rebound.

Horrow provides a most interesting chapter on protamine usage. Starting with the history of its discovery and eventual implementation, he then discusses the significance of its anticoagulant properties, as well as its role in reversing the action of heparin. Undesired reactions to protamine and various strategies for avoiding them receive attention. Those include arterial *vs.* venous administration, priming pretreatment, and a discussion of drugs not presently in clinical use which avoid the need for either heparin or protamine.

Two chapters answer differently the question of the most prevalent etiology for postcardiopulmonary bypass bleeding. Marengo-Rowe and Leveson ascribe the most common cause to fibrinolysis, arguing that many laboratory tests are misused or misinterpreted for the patient population at interest. In contradistinction, Campbell and Addonizio contend that platelet dysfunction constitutes the most common coagulation lesion, citing multiple changes in its anatomy and physiology when activated during extracorporeal circulation. Both accounts, with their divergent but overlapping therapeutic approaches, are read with profit.

With new developments of thrombolytic therapy for the treatment of acute myocardial infarction, there is a chapter appropriately included on their ramifications for anesthetic management. The fibrinolytic enzyme system, along with its activators and inhibitors, is described. The published clinical experience of these agents—mainly streptokinase